CASE REPORTS

Refer to: Devor D, Bandell H: Kidney autotransplantation for ureteral loss from granulomatous colitis. Calif Med 118:67-68, May 1973

Kidney Autotransplantation for Ureteral Loss from Granulomatous Colitis

DANIEL DEVOR, MD
HERBERT BANDELL, MD
Fontana

KIDNEY AUTOTRANSPLANTATION has been used in the past for management of a damaged and inadequate ureter but it has not previously been reported as a successful procedure for correction of injury due to intestinal fistulization associated with complications of granulomatous colitis.

Report of a Case

The patient was a 29-year-old white truck driver who was diagnosed as having ulcerative colitis in 1963. Bloody mucoid stools led to admittance and treatment in a military hospital. Prednisone, Azulfidine® (salicylazosulfapyridine) and diet therapy resulted in remission of symptoms until he began to have abdominal cramps and 10 to 15 loose stools a day, with blood and mucous admixture. In 1969 he was admitted to hospital after outpatient therapy with prednisone failed to evoke remission. Inpatient care with prednisone, Azulfidine and diet therapy again produced a remission.

Left flank pain and fever required admission to hospital in July 1971. A barium enema roentgenogram demonstrated a fistula between the descending colon and the left flank muscles. On laparotomy the active disease was found to be confined to the descending colon and the associated fistula. The diagnosis was corrected to granulomatous colitis. The descending colon was excised and the transverse colon was joined to the rectosigmoid. A left flank abscess was drained in the postoperative period and the wound closed uneventfully. An excretory urogram (IVP) performed at this time demonstrated a normal upper urinary tract (Figure 1).

In September 1971, hematuria developed and, on the basis of the clinical course and excretory urography, a left ureteral calculus was diagnosed. Symptoms and physical findings reverted to normal on conservative management.

Recurrent left flank pain prompted readmission in December 1971. A midureteral obstruction was identified radiographically (Figure 2). At exploration, the midportion of the ureter was found to be encased in fibrous inflammatory tissue. The ureter itself was stenotic and nearly destroyed by inflammatory changes. A 4 cm segment of ureter was resected and end-to-end ureteroureterostomy was performed. The margins of the ureter were not free of inflammatory changes, which decreased the chances of successful healing. The anastomosis site was splinted with a No. 8 French indwelling polyethylene catheter. On the fourteenth postoperative day, the catheter was removed and within two days a ureterocutaneous fistula became manifest. A repeat IVP showed midureteral obstruction (Figure 2).

An arteriogram performed by the transfemoral Seldinger technique demonstrated normal renal function and parenchyma bilaterally, as well as a solitary renal artery on the affected side. The patient was readmitted in January 1972 for definitive treatment. The left kidney was autotransplanted to the right iliac fossa. Ureteroneocystostomy was performed. The patient had an uneventful post-

From the Departments of Surgery and Urology, Kaiser Foundation Hospital, Fontana.

Submitted, revised, August 29, 1972.

Reprint requests to: D. Devor, MD, Department of Surgery, Southern California Permanente Medical Group, 9985 Sierra Avenue, Fontana, Ca. 92335.

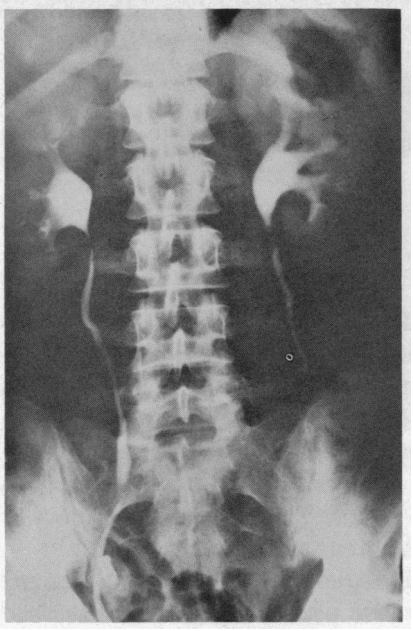

Figure 1.—Excretory urogram in 1969 showed no abnormality of upper urinary tract.

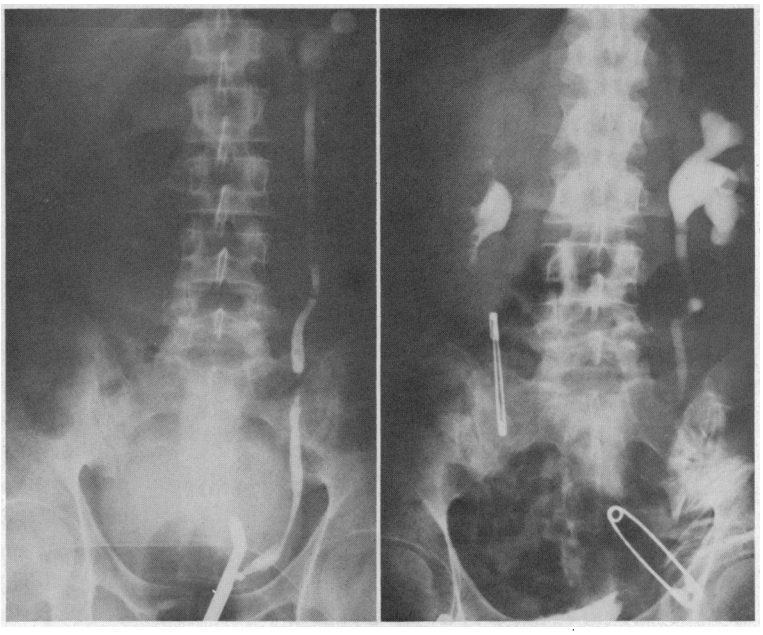

Figure 2.—**Left,** a midureteral obstruction was demonstrated radiographically in 1971. **Right,** fourteen days after resection of a segment of ureter and end-to-end ureteroureterostomy, an excretory urogram showed midureteral obstruction.

operative course and was discharged on the twelfth postoperative day. An excretory urogram on the tenth postoperative day demonstrated normal function of the autotransplanted kidney and the ureteroneocystostomy.

Discussion

Granulomatous colitis produces a variety of urologic problems as a result of fistulization, inflammation, dehydration and metabolic disturbances. Ureteric obstruction and destruction, calculus disease, enteroureteric and enterovesical fistula are well recognized hazards in these circumstances.[1]

In the present case, when primary reanastomosis of a partially destroyed ureter failed, a variety of alternatives was considered. The possibilities were: (1) mobilization of the kidney and ipsilateral reanastomosis, (2) ureteral mobilization with ureteroureterotomy, contralaterally, (3) nephrectomy, (4) use of an ileal segment to bridge the ureteral gap. The first and second alternatives were rejected because of the ligneous changes in the retroperitoneal tissues and compromised ureteral length. The third and fourth alternatives were rejected because of the active intestinal tract disease and inflammatory changes within the peritoneum. Nephrectomy and kidney autotransplantation were the only acceptable alternatives.

Autotransplantation is an attractive procedure because it offers opportunity to preserve the urinary system and does not entail immunologic complications. The procedure has been made feasible by the numerous technical advances incidental to the development of homotransplantation. It has been used for renal artery stenosis,[2] for fibromuscular hyperplasia,[3] and for iatrogenic ureteral loss,[4] but not previously for granulomatous colitis.

In the present case the patient's course was classical for granulomatous colitis in that it was prolonged and was fraught with both intestinal and urologic complications. In the circumstances an unusual effort to preserve the urinary system intact appears particularly worthwhile.

REFERENCES

1. Dowd JB, Merino M: Some urologic problems in patients having granulomatous disease of the bowel. Surg Clin North Am 51: No 3, 783-790, 1971

2. Kaufman JJ, Alferez C, Navarrete RV: Autotransplantation of a solitary functioning kidney for renovascular hypertension. J Urol 102:146-150, 1969

3. Clunie GJA, Murphy KJ, Lukin L, et al: Autotransplantation of the kidney in the treatment of renovascular hypertension. Surgery 69:326-331, 1971

4. Hardy JD: High ureteral injuries—"Autotransplantation of the kidney." JAMA 184:97-101, 1963